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ABSTRACT

A six year old female tutor was trained to facilitate social conversation between two male age mates (selected for their infrequent level of social interactions) during daily play sessions. Tutoring of peer initiations occurred in a small room adjacent to the main classroom. The peers were tutored to request information (RI) and request behavior (RB) from each other. The tutor was trained to use two teaching techniques, modeling and prompting, to get one child to verbally initiate to the other. A within subject multiple baseline design was employed. Intervention occurred across two target behaviors and two children. Criterion for phase change was based on the number of peer initiations and the number of times these initiations were followed by a response from the other peer. Criterion was set at five or more target behaviors complied with for four of five consecutive sessions. Both target children met this criterion for RIs but not for RBs. However, total RBs increased substantially from baseline to intervention. Training of the tutor by teacher before play session was effective in promoting spontaneous tutoring behavior during the play session. During training the tutor had an average of 10 opportunities to practice conversation facilitation skills. The average number of tutor prompts or models per play session was 7.7. The average number of teacher directions helping the tutor teach her peers was 3.2 per session. (Author/DB)

PEER TUTORING OF CONVERSATIONAL SKILLS: A MINI-FACILITATOR IN THE PRESCHOOL CLASSROOM

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Peer Tutoring of Conversational Skills: A Mini-Facilitator in the Preschool Classroom

The purpose of this study was to determine the effects of training a kindergarten age child to be a peer tutor and help age-mates develop conversation skills. The justification for this undertaking stemmed from literature on peer tutoring (Allen, 1976a) and investigations of the content and structure of young children's social interaction (Hartup, 1979; Schacter, Kirschner, Klips, Fredericksen & Sanders, 1974) and language development (Guarlnick in press; Garvey, 1974). Researchers have noted that peer tutoring has benefits for the tutee (Feldman, Devin-Sheehan & Allen, 1976; Long & Madsen, 1975) and the tutor (Laycock & Schwarzberg, Notel) as well as the teacher and classroom students in general (Ehly & Larsen, 1977; Strain, Cooke & Appolloni, 1973). For instance, engaging in peer tutoring has been shown to enhance both academic and social competence of tutor and tutees (Allen, 1976b; Ehly & Larsen, 1977; Feldman, Devin-Sheehan & Allen, 1976). Participation of classroom students as tutors allows teachers to utilize previously untapped teaching resources, which in turn affords them additional planning time and opportunity to carry out more effective individualized instructional programs (Strain et al., 1973).

Numerous researchers have commented on the special effectiveness and appropriateness of peer tutors for modifying the social and language behaviors of age-mates (Gerber & Kaufman, in press; Guralnick, in press; Long & Madsen, 1975; Lovitt, Lovitt, Eaton, & Kirkwood, 1973; Wahler, 1967). Later, Long and Madsen (1975) trained kindergarten children to record appropriate story listening behavior of three year olds and distribute tokens as a consequence. Other researchers have examined the effect of training peer

confederates (Hendrickson, Strain, Tremblay, & Shores, Note 2). These authors described a series of studies in which non-handicapped and handicapped preschoolers served as peer confederates for initiating social interactions with withdrawn children. The confederates were trained and successfully initiated verbal interaction, sharing, and other behavior that led to cooperative play. In all, it appears that even young peer tutors can implement and consequate behavior management strategies and modify the sociolinguistic behavior for both handicapped and non-handicapped children.

The extent and complexity of social interactive behavior among young children has been studied with increasing interest in recent years (Garvey, 1974; Guralnick, in press; Mueller, 1972; Trower, 1979). For instance, Schacter et al. (1974) conducted a developmental study of conversation between preschoolers. They noted that with increased age, conversation becomes more complex and focuses on specific topics. Schacter et al. (1974) found that from age 2-1/2 and older, children made verbal requests from each other during play, but that older children supported their requests with more justification and explanation than younger children. Garvey (1974) found that by age 4 children are also adept at taking turns during a conversation. Charlesworth and Hartup (1976) have commented on the reinforcing effect of conversation between peers, having observed that children with high rates of sending and responding to conversational initiations tend to have high sociometric status. Several investigators (Minkin, Braukman, Minkin, Timbers, Timbers, Fixsen, Phillips, & Wolf, 1976; Mueller, 1972) have pointed out that questions are a high level social skill critical to successful social interaction and conversation. In short, two essential features of young children's conversation include making requests (giving directions) and asking questions.

The reciprocal pattern of social and conversational behavior among young children (Argyle, 1976) lends credence to the notion that teaching young children to initiate and respond to each others questions and requests may help facilitate the establishment of rudimentary conversational behavior, provide the basis for continued interaction, and thus lead to the development of increasingly sophisticated social compentencies. Utilizing a same-age tutor to teach conversational behavior, as carried out in this study, provides an opportunity to examine the extent to which young, same-age peers can help in the process of teaching interactive skills. Often, tutoring effectiveness has been viewed as a function of the age difference between tutors and tutees (Feldman et al., 1976; Hartup, 1976). There is some evidence, however, to support the effectiveness of same age peer tutoring. For instance, Hamblin and Hamblin (1972) and Oakland and Williams (1975) demonstrated that same-age elementary school children can tutor reading effectively. Williams and Sherman (1973) found similar results for math tutoring.

In the present study, a peer tutor was taught to help age-mates initiate two important conversational skills: Requesting Information (RI), subsuming several categories of question-asking behavior, and Requesting Behavior (RB), a category of manding behavior. The frequency with which the tutored child made verbal initiations and the other child responded to these initiations in a free play setting was examined as well.

METHOD

Subjects and Setting

Three children, the peer tutor, 71 months, and two target children, 64 and 76 months, participated in this study. All children attended a

university-based kindergarten serving middle SES, black parents. The peer tutor was selected based on teacher judgment that her language and social skills were superior to her classmates. The two target subjects (tutees) were selected based on teacher judgment and observations which confirmed their infrequent level of social interaction compared to their classmates.

The study was conducted in a 2.0 m x 4.0 m carpeted, well-lighted room, adjacent to the main classroom. Play sessions were held four to five times per week, from 10:30 a.m. to 11:00 a.m. The playroom was equipped with blocks and other construction toys typically found in a preschool classroom.

Behavioral Definitions and Codes

Four behavior categories were observed during tutor training:

1. Teacher model (M). Teacher verbal model of a request for information or behavior.

2. Peer tutor rehearsal (R). Peer tutor's rehearsal of a particular model/prompt designed to elicit a request for information or behavior from the puppet (peer initiator).

3. Puppet compliance or non-compliance (C or NC). The teacher, speaking for the puppet representing the peer initiator, either complied with the peer tutor by emitting a request for information or behavior, or refused to comply.

4. Teacher praise (P). The teacher verbally praises the peer tutor for an accurate rehearsal of a model/prompt.

Six behavior categories were observed during the children's free play session:

1. Request for information (RI). Any verbal initiation by one target child to the other child which attempted to elicit verbal information. Requests for information included questions, restatements of another's previous verbalization, and commands to talk, e.g., "What did you do last night?"; "You said you stayed at home?"; "Tell me more about it."

2. Requests for behavior (RB). Any direction given by the initiating child specifying a motoric response, including requests to share, directions, suggestions on how to play a game, or requests to move. For example, "Please, give me that block," "Let's play army," "Come here."

3. Compliance (C). If the child to whom an initiation was made responded to an RI or RB within five seconds, a RI or RB was coded as an RIC or RBC. This signified compliance to the specific initiation.

4. Non-compliance (NC). If a target child initiated an RI or RB and the other child did not respond verbally or motorically within five seconds, a non-compliance (RINC or RBNC) was recorded. An RINC was also recorded if the responding child emitted an inappropriate response to an RI. If the responding target child gave a verbal refusal or a contrary motoric behavior, these were also recorded as non-compliant behavior.

5. Tutor model/prompt (M). Any direction by the tutor suggesting to the initiating child that he request particular information or a particular behavior from the non-target peer. For example, "Joe, tell Sam to give you a toy."

6. Teacher direction (D). Any verbal comment by the teacher to the peer tutor instructing her how to get the target child to request information or behavior, e.g., "Toni, ask him nicely," or "Wait Toni, give him a chance to ask."

Procedures

Two training procedures were employed: one for training the tutor and another which the peer tutor used to teach Subjects 1 and 2 to initiate requests.

Tutor training procedures. Ten minutes prior to the play session described below the peer tutor rehearsed ways to tutor conversational behaviors with a trainer. Role playing and puppets were used during tutor training to simulate the play session in which tutoring was to occur. The trainer manipulated a puppet which represented the target subject to be tutored. The trainer also role played the second subject to whom requests were made. The trainer modeled requests, gave instructions or prompts, and praised the tutor as necessary. More specifically, the following steps were used to teach the peer tutor how to teach her peers requests for behavior (RB) and requests for information (RI).

1. The teacher explained the purpose of social skills training and reviewed post-tutoring performance.

2. The teacher prompted and modelled the behaviors the tutor should use, e.g., "Tami, tell Joe to ask Sam what he did last night." The tutor then repeated this to the puppet (which was filling the role of the child who was to initiate a request). After the second training session, the tutor was given a list of possible requests which she could use to prompt the puppet. Most social conversation interventions used by the tutor during training were taken from this list. The peer tutor prompted the puppet to make 10 requests during each training session.

3. The puppet either complied to the tutor's initiation of a request for a behavior or information, or did not comply. If the puppet did not comply, the trainer prompted the tutor to continue initiating until the puppet did comply. Non-compliances were scheduled to occur four times per training session.

4. The tutor was praised for correct behavior throughout the session at a 1:2 ratio of praise to correct tutoring behaviors. The tutor also received a gold star to stick on a chart at the end of each training session, provided she had succeeded at making the puppet initiate requests.

Peer tutoring procedure: Requests for information. The tutor began tutoring the use of requests for information by modeling appropriate requests and prompting the peer to initiate them. For example, the tutor could say, "Sam, ask Joe what he had for supper last night." If Sam repeated this and Joe answered, the peer tutor would go on to the next model and prompt, either by selecting one from her list, recalling one from memory, making one up, or repeating one the teacher suggested.

If the child being tutored did not comply, the peer would repeat her tutoring instruction and wait until the tutee responded. Depending on the tutee's response, the trainer might intervene by instructing the peer tutor to slow down, speed up, or change her tutoring intervention. The teacher assists to the tutor during the play sessions consisted mostly of brief directions aimed at refining the tutor's approach and rate of modeling, rather than explaining what to model. For instance, if the tutor spoke too quickly or softly, the teacher would ask her to request what she said more distinctly, or if the tutor could not get a tutee's attention

verbally, the teacher would tell her to tap the tutee on the shoulder. At the end of the session, if the tutor managed to get the tutee to complete five requests for information, she received a gold star to put on her chart. Stars were cashed in for small toys and school supplies.

Peer tutoring procedure: Requests for behavior. This intervention was identical in form to the peer tutoring procedure used with requests for information, except that the target behaviors were requests for behavior. After the fourth session of this intervention, the peer tutor also dispensed tokens to Subject 2 for complying to Subject 1's requests for behavior. She gave out a maximum of three tokens per session. The tokens were traded for edibles and school supplies.

Design and Analysis

A multiple baseline design across two subjects was used to evaluate the effects of tutoring interventions (Cooper, 1974). There were three phases: baseline, RI intervention, and RB intervention. Chi-square contingency tests (Matheson, Bruce, & Beauchamp, 1970) were run on two sets of data to further explore the extent to which peer requests were effective in eliciting tutee requests and the extent of which tutee requests were effective in eliciting peer compliance.

Baseline. During baseline Subject 1 and Subject 2 were instructed to play together appropriately by their teacher, e.g., "Play nicely with the blocks. Do not make a big mess and do not fight." Baseline continued for six sessions. Each play session lasted approximately 10 minutes. Four minutes of data were taken on each subject during that period.

Intervention 1: Requests for information. After baseline, the tutor entered the play session to begin tutoring Subject 1 to make requests for information. This period continued for seven days. Subject 2 was not trained. Tutoring of Subject 1 continued until he was able to gain five compliances for four out of five days. Once criterion was reached, tutoring began with Subject 2.

Intervention 2: Requests for behavior. Following Intervention 1, Subject 1 began tutoring requests for behavior. Five days after Subject 1 began RB training Intervention 2 began with Subject 2. On the fifth day of Intervention 2, Subject 2 received tokens for compliance to Subject 1's requests for behavior. Delivery of tokens continued throughout the rest of Subject 1's intervention.

Data Collection

Two separate data collection systems were used: one system during tutor training and the free play session.

Tutor training session. A checklist was used by the trainer to structure the training sequence and collect data on trainer, tutor, and puppet behaviors. Four types of behavior were to occur in sequence: trainer model or prompt of a request, tutor rehearsal of the request, compliance (or non-compliance) by puppet, and teacher praise. The checklist consisted of 10 rows, 1 row for each of the 10 training trials. Each row was divided into boxes, labeled trainer model, tutor rehearsal, compliance to request, and teacher praise. As the trainer emitted or observed each category he checked the appropriate box. A circle was placed around the check mark if a given behavior occurred out of sequence.

Reliability was determined by comparing checklists of the trainer and aide. Each box was considered an agreement or disagreement.

Play session. As noted, six behaviors were coded during the play session: requests for information (RI), requests for behavior (RB), compliances (C), non-compliances (NC), peer tutor model/prompts, and teacher directions. A continuous observation system was used. A cassette tape player was used to cue the beginning of each 10-second interval. (These intervals were used for calculating reliability only.) Two observers listened to the tape via earphones while seated 1 m apart. They used specially prepared coding sheets to record tutor initiations, peer responses, and teacher directions. Behaviors which lasted more than one ten-second interval were coded as one occurrence. If there was a pause of three or more seconds between the offset of a behavior and its reoccurrence, the behavior was coded as two separate occurrences.

The two observers practiced coding during pre-baseline play sessions until two consecutive sessions occurred with all categories of behavior and reliability estimates greater than 80%. Reliability was calculated via the standard formula: (Number of agreements/number of agreements plus disagreements) X 100. The two days during which criterion reliability was met were included in the baseline data.

RESULTS

Reliability

Thirty-three percent of all play sessions were observed for reliability purposes. Four checks occurred during baseline, three during Intervention 1

and one during Intervention 2. The average reliability for RIC/NC and RBC/NC was 95 percent (range: 79% - 100%). The average reliability for peer tutor models was 92% (range: 77% - 100%). Table 1 contains the average reliability per category. All reliability coefficients were within an acceptable range, except for teacher directions which averaged 69% (range: 67% - 70%).

Only two reliability checks were taken during tutor training, however, interobserver agreement during training was 100 percent. During training it appeared that the training procedure was followed accurately with few or no deviations from the standard procedure.

Insert Table 1 about here

Effect of Tutoring on Peer Interaction

Figures 1 and 2 show the effects of a peer tutor on two types of verbal initiations by Subject 1 and Subject 2 are presented below. The data indicated that peer tutoring led to a substantial increase in both requests for information (RI) and requests for behavior (RB). Compliance to requests for information was consistently high across both subjects. Compliance to request for behavior varied between subjects and was not comparable to requests for information until tokens were introduced with Subject 2.

Requests for information (RI). Figure 1 shows that Subject 1 initiated a significantly higher rate of requests for information during intervention than during baseline. During intervention the average rate of RIs per day was 5.9 (R = 3 - 10), compared to 0.8 (R = 0 - 3) during baseline. The rate of RIs also dropped off when the intervention was withdrawn.

Both Subject 1 and Subject 2 met criteria for requests for information, that is, each emitted five or more RIs to which there was compliance from the other for four of five consecutive sessions.

Requests for behavior. Subject 1 substantially increased his use of requests for behavior as a result of the peer tutoring intervention (see Figure 1). During intervention, the average rate per session for requests for behavior was 4.4 (R = 3 - 7), compared to 1.6 (R = 1 - 3) during baseline. Subject 2 also increased his rate per session of requests for behavior, from 4.8 (R = 3 - 6) during intervention, compared to 0.8 (R = 0 - 3) during baseline (see Figure 2). Neither subject met the criterion for requests for behavior responded to by the other subject.

Compliance to requests. A chi-square test (Matheson, Bruce, & Beauchamp, 1970) was used to compare to frequency of compliance to both request for information and requests for behavior from baseline to intervention, across both subjects. No significant difference in compliance rates was found between phases for requests for information. During baseline, the compliance rate was .91, compared to .77 during intervention. A significant difference was found for requests for behavior across phases (X^2 (1) = 6.16, $p < .05$). During baseline, the compliance rate for requests for behavior was .84, compared to a drop to .47 during intervention.

Tutoring effectiveness. A contingency analysis was used to determine if requests followed tutor interventions at a level greater than chance, or alternatively, whether subjects emitted requests independent of tutor interventions. The analysis was significant (X^2 (1) = 5.5, $p < .025$). Altogether, 69% of all tutor models led to a subject requests, while 88% of all subject

requests were contingent on tutor models. The data indicate that tutor models were significant predictors of a tutor request.

Tutor training. The number of tutor models per play session ranged from 6 to 8.5, with the greatest number of models occurring in requests for information intervention. Brief assists from the trainer (teacher directions) occurred on an average of 2.8 times per session during the RI intervention and 3.9 times during the RB intervention.

DISCUSSION

Beyond the efficacy issue, a major concern in peer tutoring of social-conversational skills, particularly programs involving young children, is the extent to which the tutor understands the purpose of the tutoring process and why he or she has been given the tutor role. There is some evidence that children as young as 5 are able to understand how their behavior influences their peers and how another's behavior may influence a third person's (Cooney, 1978, Forbes, 1978, Hoffman, 1977; Urberg & Docherty, 1976). Turiel (1978) reviewed research concerning children's understanding of social norms and rules, and concluded that young children can discriminate those events and behaviors which can help others, and that this understanding may be learned through interacting with peers. The evidence presented in the current study strongly supports the conention that a preschool age-mate tutor gain understanding of the tutor role and be employed successfully to facilitate conversational behavior among less conversationally able peers. Subsequent to specific tutor training sessions, which involved role

playing and rehearsal a six-year old preschooler tutored two age-mates and significantly increased the rate of two important conversational skills, requests for information and requests for behavior. Requests for information subsumed several categories of question-asking, while request for behavior consisted of mands for specified play behaviors. The results indicate that tutor prompts to her peers consistently led to the peer a request for information or behavior to the other child. Further, these results suggest that use of questions by preschoolers tend to evoke appropriate responses from peers, thus maintaining interaction between them, and replicating the results obtained by Mueller (1974), Spilton and Lee (1977), and Garvey (1977). Peer initiations of requests for behavior; however, did not lead to the level of compliance that was observed when a peerrequested information. A possible explanation for less compliances to requests for behavior than requests for information may be that the children were willing to talk to each other, an act which does not disrupt their involvement in their own play with objects and materials or their personal control over these materials. On the other hand, the requests for behavior prompted by the peer tutor may not have been creative enough to compete with the ongoing activities of the children.

While RBs did not lead to high levels of compliance, skill in initiating such behavior and compliance to such requests may be of equal or greater value than compliance to RIs for young children. For example, other forms of simple cooperative behavior would appear to be predicted on concrete environmental interactions, which may then be the foundation for higher level conversational behavior, social competence, and increasingly sophisticated cognitive

performance (Smilansky, 1968). Because of this, the tutor was instructed to distribute tokens to the target child for complying to requests for behavior. When tokens were used, compliance increased dramatically and a full cycle of interactive behavior occurred.

Together these data clearly indicate that even a young child can learn to effectively carry out a number of tutoring interventions aimed at facilitating peer conversation with limited preliminary training and little direct assistance from an adult. The success and enjoyment the peer tutor experienced, and the relative cooperation gained from her tutees, coresponds with the findings noted above, and offers promise that socially skilled preschoolers can function as competent and willing interpersonal relations "coaches."

Kazdin (1979) has further noted some long range implications of social skill training worth considering. Based on an extensive review of the literature Kazdin (1979) proposed that social skill deficits, especially in the domain of interpersonal relations and friendship-building, contribute to the development of psychopathology. Given that there is a relationship between early social skill development and later psychopathology, it may be considered preventive psychology to employ peer-tutoring processes which stress interpersonal skills and lead to competency in developing friends. In short, peer tutoring may have a secondary treatment effect, the prevention of psychopathology, a goal equally as important as most primary educational objectives.

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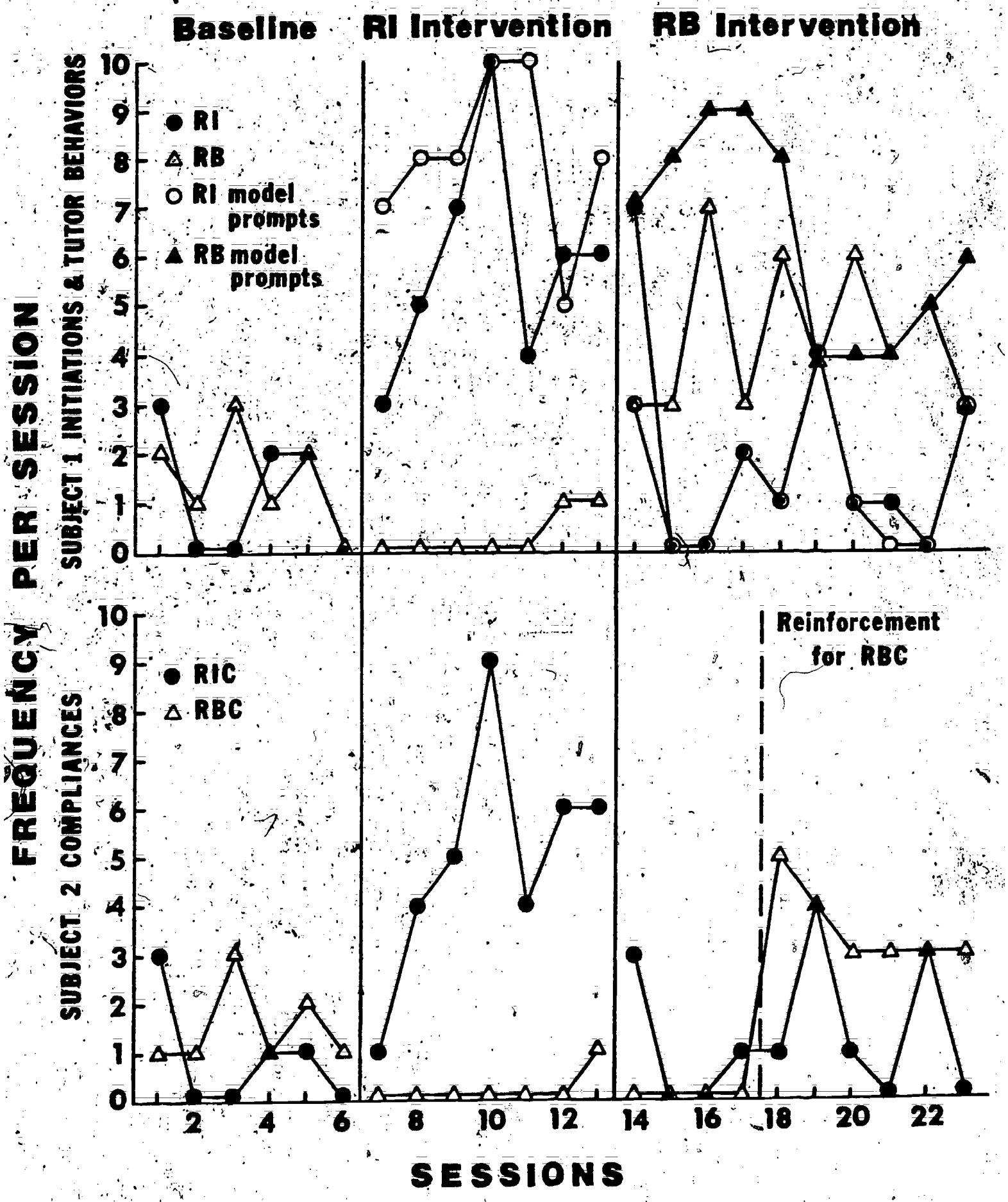
TABLE 1

	Reliability	Range
RIC	.95	.70-1.0
RINC	.85	0-1.0
RBC	1.0	
RBNC	.95	.75-1.0
RI	.99	.89-1.0
RB	.95	.75-1.0
C	.95	.7-1.0
NC	.95	.60-1.0
Total Target Child	.95	.79-1.0
Tutor Model/Prompt	.92	
Teacher Directions	.67	.67-7.0

TABLE 2

Child	Requests for Information		Requests for Behavior	
	Number of Tutor Models	Percent Preceded by Teacher Directions	Number of Tutor Models	Percent Preceded by Teacher Directions
Subject 1	8.5	41%	7.3	51%
Subject 2	8.0	24%	6.0	67%


Baseline
RI Intervention
RB Intervention
FREQUENCY PER SESSION
SUBJECT 1 INITIATIONS & TUTOR BEHAVIORS
RI
RB
RI model prompts
RB model prompts
SUBJECT 2 COMPLIANCES
RIC
RBC
Reinforcement for RBC
SESSIONS

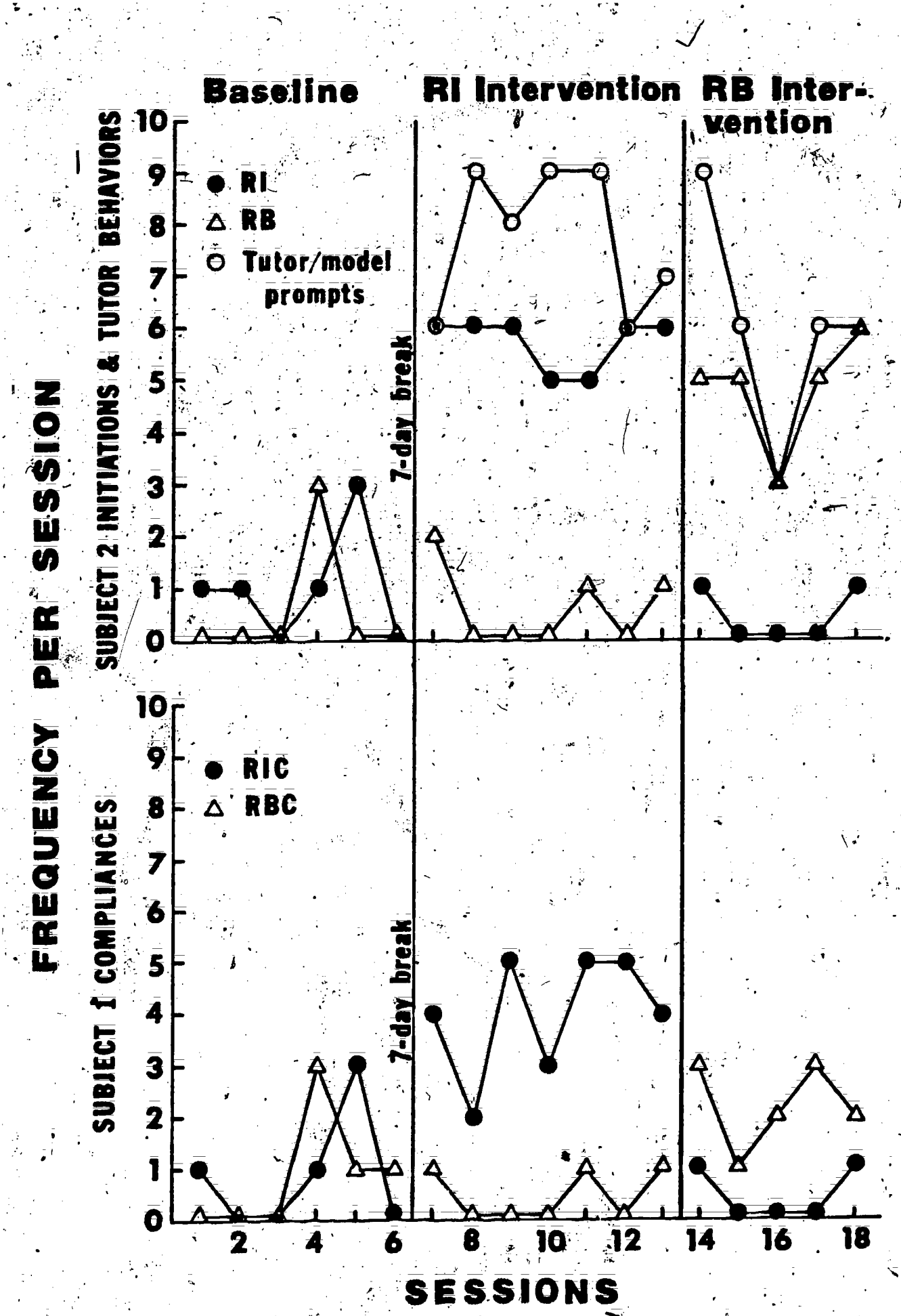

Baseline
RI Intervention
RB Inter-vention
FREQUENCY PER SESSION
SUBJECT 2 INITIATIONS & TUTOR BEHAVIORS
RI
RB
Tutor/model prompts
7-day break
SUBJECT 1 COMPLIANCES
RIC
RBC
7-day break
SESSIONS

FIGURE CAPTIONS

Figure 1: Subject 1's Requests for Information and Requests for Behaviors and Subject 2's Compliances during Baseline and Intervention Conditions

Figure 2. Subject 2's Requests for Information and Requests for Behaviors and Subject 1's Compliances during Baseline and Intervention Conditions

TABLE CAPTIONS

Table 1. Mean and Range Reliability Coefficients for Child Behaviors by Category and Total Tutor and Teacher Prompts

Table 2. Peer Tutor Training Effects: Number of Tutor Interventions and Teacher Directions